

# **Heat Injury Prevention**

**FORT HOOD, TEXAS**

The prevention of heat  
injuries is a Command  
responsibility!

# Heat Equilibrium in the Body

## Influencing Factors

- Air temperature
- Temperature of surrounding objects
- Sun's radiant heat
- Relative humidity
- Air movement
- Amount/type of clothing worn
- Metabolic (body) heat

# Heat Loss in the Body

- Metabolism and muscular activity  
heat is moved to cooler body surfaces
  - Sweat evaporation
  - Radiation of heat waves
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- *Heat, in general, is transferred from the hotter point to the cooler point*

# Types of Heat Injury

- Heat cramps
- Heat exhaustion
- Heat stroke
- *Sunburn*

# Heat Cramps

## Characteristics

- Caused by heavy salt & water loss
- May be of great severity
- Occurs alone or w/ heat exhaustion
- Body temperature normal (unless accompanied by heat exhaustion)

# Heat Cramps

## Symptoms

- Painful muscle cramps of the limbs, stomach, and back
- Heavy sweating
- Extreme thirst

# Heat Cramps

## First Aid

- Move soldier to cool, shaded area
- Loosen clothing
- Have soldier drink small quantities of water until hydrated
- Seek medical help if cramps persist



# Heat Exhaustion

## Characteristics

- Caused by excessive salt depletion and dehydration
- Rapid pulse rate
- Blood pressure may be low
- Rectal temperature elevated
- Oral temperature may be subnormal or slightly elevated

# Heat Exhaustion

## Symptoms

- Profuse sweating
- Extreme fatigue
- Nausea and/or vomiting
- Giddiness
- Muscle cramps (heat cramps)
- Tingling sensation in extremities
- Rapid breathing, fainting

# Heat Exhaustion

## First Aid

- Move soldier to cool, shady area
- Loosen clothing
- Pour water on and fan soldier's body
- Have soldier drink small quantities of water until hydrated
- Elevate soldier's legs
- Seek medical help if symptoms persist

# Heat Stroke

## Characteristics

- *A MEDICAL EMERGENCY*
- High mortality rate
- Results when thermo-regulatory mechanisms are not functional
- May occur with dramatic suddenness
- High body temperature (106°F)

# Heat Stroke

## Symptoms

- Throbbing headache
- Bizarre behavior, delirium
- Weakness, nausea, vomiting
- Flush dry skin, excessive warmth
- Disorientation, mental confusion
- Sweating may or may not be absent
- Coma

# Heat Stroke

## First Aid

- Seek Medical Aid & Evacuate Immediately!
- Move soldier to cool, shady area
- Loosen or remove clothing
- Immerse in water, fan soldier's body
- Elevate legs, massage extremities & skin
- Apply cold packs if available
- If conscious, have soldier drink water in small quantities

# Predisposing Factors

- Unacclimatized individuals
- Recruits
- Overweight & fatigue
- Heavy meals & hot foods
- Alcoholic beverages & drugs
- Fever
- Tight, occlusive clothing

# Prevention of Heat Injuries

- Water consumption
  - Use water consumption tables
- Adequate (not excessive) salt intake
  - Military diet provides adequate salt
- Acclimatization
  - Requires approximately 2 weeks



# Prevention of Heat Injuries

- Physical condition
  - Infections, fever, immunization reactions, sunburn, fatigue, overweight, prior heat injury
- Tailor work schedules
  - To fit climate, physical condition, situation
- Protection from the environment
  - Loose fitting clothing, shading, marching over grass rather than concrete

# Prevention of Heat Injuries

- Special attention to recruit trainees
  - Scheduling of strenuous training activities
- Education
  - Individuals, Supervisors
- Wet Bulb Globe Temperature index
  - Guideline for making recommendations regarding troop activity in hot weather

# Summary

- *Heat Stroke is a Medical Emergency*
- Drink plenty of water
- Use work/rest cycles
- Eat all meals to replace salt
- Modify your uniform
- Recognize the risk of MOPP/Body Armor/Armored Vehicles

**MEDDAC**

**Department of Preventive**

**Medicine**

**Environmental Health**

**Service**

**Questions**

**Please Call**

**288-1661 or 288-  
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